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Several important conclusions follow from the assumptions that the fundamental emotions are (a) innate, universal phenomena, and (b) the components of man's principal motivation system. All people have in the fundamental emotions the capacity for a common set of subjective experiences and expressions. These have a special communication value. The communication function facilitates the interpersonal and inter-cultural understanding of the underlying subjective experience. They may serve as a base for interpersonal and cross-cultural understanding. The emotions tend to generate a set of cognitive labels that translate to a corresponding common set of meanings. These theses seem to be corroborated by Thurstone's concept of the role of affect in race attitude scaling and by Osgood's finding that the affective dimension of meaning shows the greatest cross-cultural constancy. These conclusions support an expanded definition of phenomenal field. It was proposed that the subjective culture is determined by innate and socio-cultural factors and by unique person-environment interactions. Since the emotions were considered to be man's principal motivation system and to be motivating experiences, they were viewed as the most fundamental and culture-common aspects of subjective culture and phenomenal field. (AUTHOR)

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The Emotions as a Culture-Common Framework of Motivational Experiences and Communicative Cues[1]

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The subjective culture has been defined as "the way subjects in different cultures perceive and conceive significant aspects of their environment [Triandis & Vassiliou, 1967, p. 1]." This concept seems to have much in common with a concept from personality psychology, the phenomenal or perceptual field, which has been defined as the way a person perceives and experiences the universe at a given moment in time or at the instant of action (Combs & Snygg, 1959, p. 20 ff.). In both definitions, emphasis has been placed on the person's perception or conception of events as the determinant of behavior. Thus, the global formula of the perceptual approach is this: A person's phenomenal field or subjective culture is his perceptions and conceptions of his self and his environment, and his behavior is a function of his phenomenal field. While at one level of behavior analysis, there is a great deal of explanatory power in this perceptual approach to cause-effect relations, it does not seem to give adequate weight to the affective and motor components of behavior. A general question that the perceptual approach does not answer satisfactorily is this: What determines the phenomenal field? Or how does it happen that a person perceives the world as he does? It would be useful if we could differentiate the determinants of the phenomenal field and of the perceptual process.

As one step toward the delineation of the perceptual approach, I should like to propose that the subjective culture or phenomenal field is determined by three sets of factors: 1) species specific and person

specific innate mechanisms or capacities, each of which governs a range of dispositional tendencies; 2) socio-cultural phenomena, including adaptation and social learning; 3) person-environment interactions, including idiosyncratic, or unique, individual experiences. I should also like to propose that the problems of behavior analysis are over simplified if we consider perception as the determinant of personality and social functioning without considering emotion and action.

I am emphasizing that evolutionary-genetic factors (e.g., fundamental emotions) and socio-cultural mechanisms (e.g., role behaviors) and unique personal experiences are all crucial determinants of individual personality functioning and human affairs. It is necessary to look not only at a person's culture as perceived but at the biological individual as well, and any really thorough look at the biological individual today will find innate programs and neuro-physiological processes among the ranking determinants of human behavior (Scheinfeld, 1965; Lorenz, 1965; Tomkins, 1963; Glass, 1967).

The emotions and emotion-related phenomena are excellent vehicles for demonstrating the three kinds of determinants of phenomenal field or subjective culture for they have innate, socio-cultural, and idiosyncratic components. While we hold that the fundamental emotions are innate, we recognize that the way the fundamental emotions combine and interact with each other and with other subsystems of personality is influenced by socio-cultural and idiosyncratic factors. The emotions or affects make up a very important part of a person's subjective culture or phenomenal field for they determine in large measure how he perceives and responds to all phenomena.

I shall present some theory and some empirical evidence in an effort to demonstrate that a substantial and significant portion of the emotion component of personality (or of the subjective culture or phenomenal

field) is determined by innate mechanisms. I shall also speak briefly to the question of how cultural factors and person-environment interactions influence affective experiences and emotion related phenomena. I shall also attempt to show that species common fundamental emotions provide a common base of cross-cultural or human similarities and that similarities decrease as we focus on behavioral and cognitive phenomena that are less directly a function of a single fundamental emotion. Finally, I shall try to point out how the similarities among people that derive from the fundamental emotions constitute a pan-cultural communication system. For the most part, I shall be concerned with the fundamental emotions; i.e., the relatively unitary motivating experiences like enjoyment, distress, anger, and fear. However, I shall present some observations and some data on the complex emotions which we see as blends or combinations of the fundamental emotions, for the way fundamental emotions become linked or combined as complex emotions demonstrates the roles of culture and experience.

The Emotions and Facial Expressions: Universal, Innate Phenomena

Cross-cultural research has typically looked for differences, and the search has been a rewarding one. From the early work reviewed by Klineberg (1940) to the recent exhaustive comparisons of the Greek and American cultures by Triandis, Vassiliou, and Nassiakou (1968), psychological differences between cultures have proved fascinating and enlightening. This search for differences appears to be a natural consequence of the anthropological era of cultural relativism and the psychological era of environmentalism and learning theory. With the recent upswing of physiological psychology and behavior genetics, the way is being cleared for the search for cultural constants or human similarities. As McClintock & Georgas (1968) have stated, we must know the similarities between cultures before we can intelligently interpret the differences.

Perhaps the first cross-cultural investigation was Darwin's (1872) search for similarities in the expressions of the emotions. His choice of an area to look for similarities was either serendipitous or ingenious, for as we shall see, the emotions remain probably the most important source of psychological similarities across languages, cultures, and races. However, in order to appreciate more fully the significance of human similarities based on the emotions, it will be helpful to state briefly our general theory of behavior, particularly as it relates to the emotions, and then to examine some evidence for species common affective characteristics from the evolutionary-ethological-genetic perspective.

General Theoretical Framework: Emotion ↔ Cognition ↔ Action

Tomkins (1962, 1963) and Izard and Tomkins (1966) have presented a general theory of behavior which postulates that the emotions subserved by innate mechanisms constitute the principal motivation system for human behavior. Each emotion is considered to have unique motivational properties, though one emotion may activate, enhance, or attenuate another. We have defined nine primary or fundamental emotions.

We have maintained that emotion is a complex concept with neurophysiological, behavioral-expressive, and phenomenological levels. At the neuro-physiological level emotion relates to neural firing based on innate programs. At the behavioral-expressive level, emotion is primarily facial behavior or facial expression. At the phenomenological level, emotion is subjective experience, and this subjective experience tends to generate imagery and cognition which may serve as additional cues influencing subsequent affect and behavior. From this definition, it is easy to see why we consider the emotions as the most significant component of the subjective culture, and how the emotions provide an excellent demonstration of the innate, socio-cultural, and idiosyncratic

determinants of subjective culture.

Historical Perspectives

Most of the empirical evidence for emotion-specific response patterning relates to the behavioral-expressive level of emotion, particularly to facial expressions. The ideational lineage of expressive behavior is one of the most venerable to which psychology makes a claim. Otto Rank (1930) suggested that the first psychology of expression was set down by the Babylonians in their so-called "twitching books" around 3000 B.C. The Greek players in the Dionysean theater (c. 500 B.C.) as well as the ancient Roman theatricals practiced a psychology of expression with their facial masks or persona. The jolly character literally wore a face or mask of joy and the tragic character one of distress and sadness. And, of course, there was Aristotle and his Physiognomonica. These early writings and practices marked the beginning, at least in recorded history, of man's conscious awareness or belief in a direct connection between an emotional experience and a facial expression that communicates the significance of that experience to fellow man. The artist and common man have always maintained this belief and behaved accordingly. The art and literature of modern times have carried on the tradition. In 1604, an Englishman named Wright said that there can be no doubt "but that the passions of our minds work diverse effects in our faces [Hillman, 1960, p. 196]."

Some early influential physiologists, Bell (1806) in England, Piderit (1858) in Germany, and Duchenne in France (1876), conducted anatomical studies and described the muscular involvements in the various expressions assumed to correspond to specific emotions. Darwin (1872) summarized, extended, and systematized the work along this line, but the certainty of the connection between emotion and specific facial expression remained unsettled.

Some of the early psychologists (Wundt, 1896) followed the thinking of Darwin and proposed some fruitful hypotheses but the methods of psychophysics were not suited to the problem and early affective psychology met with many failures. Then came Pavlov, Thorndike, Watson, Hull, the behaviorist and neobehaviorist, the environmentalists, cultural relativists, and learning theorists. The resulting Lockean, associationistic, s-r, drive-reduction psychology with its logical positivistic philosophy of science left little room for such "nebulous" concepts as the uncontrollable emotions. It was under these dominating influences that the findings of Landis (1924a, 1924b, 1929) and Sherman (1928) knocked emotion research out of the mainstream of psychological science.

There have been numerous effective criticisms of the Landis and Sherman studies (Murphy, Murphy & Newcomb, 1937; Davis, 1934; Arnold, 1960; Honkavaara, 1961; Plutchik, 1962; Andrew, 1963; Bolwig, 1964); suffice it to say here that they suffered not only from theoretical and methodological problems but from a psychological Zeitgeist that would attribute no behavioral influence to the genes. Surprisingly to many psychologists, some good research on the specific emotions did continue.

There are three lines of evidence that support our postulate that the fundamental emotions and their expressions are innate: 1) evolutionary and ethological studies; 2) developmental studies and studies with the congenitally blind; 3) cross-cultural studies of emotion recognition. I have recently reviewed the rather extensive and recently growing body of literature on the emotions and facial expressions (Izard, 1968b) so only a brief summary of each of these major topics is in order here.

Evolutionary and Ethological Evidence

Darwin (1872) was the first to deal with the evolution of facial expression, and while many of his astute observations remain undisputed,

his famous three principles of expression evolution have proven incorrect or inadequate. For example, a careful study of the principle of serviceable associated habits reveals that it is only as valid as the psychological principle of learning by association and the genetic principle of inheritance of acquired traits. Further, a careful effort to systematize Darwin's work in this area showed that he did not always interpret the principles in a psychologically consistent fashion. For example, he gives the impression that expressions (or expressive movements) follow from the animal's state of mind, desire, or intention. Yet, he indicates that not all of the movements are useful (or directly adaptive), suggesting that some may be merely by-products (or unintentional components) of adaptive action. Darwin's lack of a clear resolution here can hardly be viewed as a serious fault since there is still controversy as to whether a display is the incidental aspect of movements used in adapting to a stimulus situation or the direct result of a cognition relative to that situation.

Craig (1921-22), F. H. Allport (1924), and Honkavaara (1961) criticized Darwin's notion that the expressions are frequently useless. They saw this as part of his neglect of the psycho-social or communicative function of facial expressions. This criticism seems unfounded. Darwin's position was that <u>some</u> of the expressions might lose their <u>biological</u> usefulness. Further, while he was understandably preoccupied with the biological and evolutionary aspects of facial expressions, his conception of their psycho-social function was made quite explicit: "The movements of expression in the face and body are of much importance for our welfare. They serve as the first means of communication between the mother and her infant; she smiles approval, or frowns disapproval, and this encourages her child on the right path. We readily perceive sympathy in others by their expressions; our sufferings are thus mitigated, our

pleasures increased, our mutual good feelings strengthened. . . Expression in itself, or the language of the emotions, is certainly of importance for the welfare of mankind [Darwin, abridged by Beadnell, 1934, p. 170-171]."

It should be noted that Darwin did not consider all expressions as biologically useless. He made this clear in the following application of his own principle of variation and natural selection: ". . . for the males which succeeded in making themselves appear the most terrible to their rivals, or to their other enemies, will on an average have left more offspring to inherit their characteristic qualities than have other males [Darwin, abridged by Beadnell, 1934, p. 44]." Some of this utility should continue for the individual member of the species. Indeed when some expressions occur without biological value, it is consistent with Darwin's basic position to infer that with decrease in biological usefulness there may be increase in psycho-social usefulness.

In summary, Darwin was correct in seeing a functional aspect in facial expressions, their psycho-social significance in communicating to others, and the continuity of expression in man and animals. His theoretical formulations do not constitute a clear systematic position, but the variety and quantity of essentially accurate individual observations on the origin and significance of facial expressions make his contribution an invaluable work of originality and ingenuity. For example, he was the first to recognize the fundamental neurophysiological similarity of Attention or Interest, Surprise (Astonishment), and Fear. He saw these three processes as representing increasing gradients of stimulation or neural firing. This relationship was confirmed by James (1890) and systematically detailed as a theoretical postulate by Tomkins (1962) and Izard and Tomkins (1966).

The work of ethologists has furnished valuable data and hypotheses

regarding the origin and significance of display or expressive behavior. Tinbergen's (1952) extensive study of bird displays led him to conclude that such behavior consisted of "displaced activity" or "intention movements." He maintained that display activities are innate motor patterns of real biological significance. He agreed with Lorenz that the common element in all display behavior is their function as social releasers. Displays may serve as signals and increase the readiness to react, but they always elicit a specific reaction in other individuals. This release function apparently started a new evolutionary development, termed ritualization after Huxley (1923), whereby displays become increasingly better adapted to their releaser function. Ritualization leads to morphological changes that bring about an exaggeration and simplification of the underlying movement and an increasingly independent subserving nervous mechanism.

Huber's (1931) carefully detailed anatomical analysis of the evolution of facial musculature provides additional insight into the phylogenetic function and significance of facial behavior. He revealed his point of view in the opening chapter when he used the words of Cruveilhier (1851) to describe his subject as "the muscle group to which our emotions are trusted [Huber, 1931, p. 2]." Huber emphasized that the spontaneous contraction of voluntary muscles following emotion-evoking stimulation is a motor reaction largely characteristic of the facial field (p. 155-156). "Taking into consideration the fact that spontaneous facial expressions with their manifold delicate shadings, as seen in man, result from varied emotional reactions, we may conclude that the elaboration of facial expression during the phylogeny of man closely followed the evolution of emotional life, which in turn depended upon the elaboration of the association centers. We may further assume that evolving man consciously used and developed certain facial expressions in order

to make himself understood to his fellow creatures in a fuller and more definite way [Huber, 1931, pp. 151-152]." Huber points up that the finely graded facial expression of man evolved from crude, grimace-like group action of mimetic muscles as seen in the anthropoid apes and lower primates. Huber is quite emphatic in his contention that the mimetic muscles are still in a state of progressive development, having by no means reached their final stage of evolution.

In his tome, Cerebral functions in infancy, Peiper (1963) offered an approach or emphasis somewhat different from Darwin's by tracing the origin of the expressions to the principal sense organs and their natural reactions to pleasant or unpleasant stimulation. The facial expressions have their basis in the facial muscles, the muscles that form the radiating and circular "frames" of the mouth, nose, and eyes, "the seats of the three senses whose original mission is increasing the perceptive ability for welcome stimuli and decreasing it for unwelcome ones [p. 112]." A given involuntary sensory reaction may spread to a nonstimulated sensory organ, a process termed the "spreading reaction." For the most part, according to Peiper, facial expressions have their origin in local sensory reactions and spreading reactions.

Peiper, like Darwin and James, saw a functional relationship between Attention or Interest, Surprise (Astonishment), and Fear. Peiper saw the connection from a somewhat different vantage point. In the expressions of all of these states, the eyes and mouth tend to open simultaneously. The opening of the eyes serves to enlarge the visual field and facilitate visual perception. The movement of the mouth is seen as a spreading reaction, in contrast to Piderit's view that it improved hearing and Darwin's belief that it facilitated quick, preparatory inhalation (Peiper, p. 131). The expression of these emotions in animal and man is remarkably similar. Szekely (1954) and Freedman (1961) have developed

the point that 8-month anxiety in the infant had its origin in the flight response of sub-human forms.

A number of more recent contributions from biologists or ethologists have extended the work of Darwin, Huber, Tinbergen, Lorenz, and Peiper. The works of Andrew (1963, 1965), Bolwig (1964), and Van Hooff (1963) are examples. Andrew pointed out that some expressions had their original causation in organism-environment processes that activated responses for protecting vulnerable areas (especially sense organs), a thesis similar to that of Peiper. He argued that other expressions originated from responses associated with vigorous respiration and grooming. He distinguished sharply between the expressions' original causation and their function of communication, the function which guaranteed their evolutionary descent. Andrew must also be credited with demonstrating the correlation between animal sociability and expressiveness--he observed that the relatively social wolf displays a far greater range of facial expression than the solitary bear.

Andrew went on to suggest that the evolutionary ultimate in communication, human speech, may have evolved from an origin like the modulated grunts of baboons that accompany their lip-smacking facial display. He believes the sucking and open-mouth kissing of infants may have modulated the grunts of early man and that these affectionate sounds became elaborated into the vocal expressions of speech.

Bolwig pointed out that while in lower primates the face is almost blank, in higher primates the face has become an important organ of communication--an organ for symbolizing the emotional condition of the individual. Van Hooff has worked out a scheme for classifying rather finely differentiated expressions in the higher primates, differentiating, for example, between an "attack face" and an "aggressive threat" face.

Harlow's (1958, 1959, 1960) work on affectional responses in macaque

monkeys led him to conclude that the monkey and the child pass through highly similar developmental stages. This holds not only for affectional responses but for the emotional patterns like those of fear and anger as well.

Leeper (1965, pp. 68-69) has made an interesting observation on the special significance of emotional motives in higher species, an observation that could have been inferred from the work just reviewed. He pointed out the obvious increase in emotionality and "emotional motives" as animals became more and more complex through evolution. Increased emotional motivation must be viewed as adaptive in the life of complex living creatures. It seems quite reasonable to me that Leeper's argument holds equally for emotion expression and the perception of the significance of such behavior.

Kardiner (1954) made a somewhat similar argument concerning the role of the positive emotions in the development of social and cultural values. He regarded these "social emotions" as the basis for social cohesion and culture itself.

Goldfarb's (1955) research led him to conclude that the "social emotions" as developed from native dispositions through experiences in the family lead to inner control, planfulness, foresight, and conceptual thought. The absence of the positive social emotions are so highly maladaptive as to threaten the survival of the individual. Spitz's (1945) earlier study yielded similar findings.

The hard data from the studies of the evolution and ethology of facial expressions do not contain all the answers as to what is passed on phylogenetically and what is individually learned. This problem is complex, and there remain many relevant questions. But some tentative summary observations may be drawn.

1. The facial neuro-muscular mechanisms necessary for the formation

of most of the basic expressions show continuity from the higher primates to man (Huber, 1931; Bolwig, 1964).

2. Facial expressions in man bear close similarity to animal responses which originally served a function relating to defense of vulnerable areas, vigorous respiration, or grooming (Andrew, 1963, 1965; Van Hooff, 1963).

3. Some facial expressions closely resemble natural sensory reactions (and consequent spreading reactions) to stimuli (Peiper, 1963).

4. At least some facial expressions are derived from responses that served to communicate to other animals (Tinbergen, 1952; Lorenz, 1965). This is most strongly stated by Andrew (1963) who held that the communicative element had to be present before natural selection could begin to shape a response into a component of a display.

5. Some expressions may be the result of non-voluntary "actions due to the constitution of the nervous system [Darwin, 1872, pp. 28-29]."

6. It is generally agreed that facial expressions convey information about the emotions. Exactly how this came about phylogenetically or ontogenetically and the precise nature of the relationship between emotions and facial expressions in the individual is not yet completely understood.

7. The emotions are adaptive in the life of complex organisms (Leeper, 1965). The same argument can be made for the expression and perception of the emotions.

Evidence from Developmental Processes and the Congenitally Blind

Before looking at the psychological research on the question of the innateness of the emotions and their expressions, I would like to quote Lorenz on this problem. He wrote: "What is preformed in the genome and inherited in the individual is not any 'character,' such as we can see and describe in a living organism, but a limited range of possible forms

in which an identical genetic blueprint can find its expression in phenogeny [Lorenz, 1965, p. 1]." And he remarked further: "a particular motor sequence may owe to phylogenetic processes all the information on environment underlying its adaptedness and yet be almost wholly dependent on individual learning for the 'decoding' of this information [Lorenz, 1965, p. 79]." I am not sure how useful these statements will be as guiding principles in the emerging field of behavior-genetics, but they have widened my perspective of the nature-nurture problem as it applies to the emotions.

Goodenough addressed herself directly to the question of the relative influence of innate vs. learned elements in the overt expression of the emotions. She used a 10 month old infant as a subject in obtaining photographs of different emotional expressions. The infant was exposed to eight specified emotion-evoking situations and her responses to each were photographed. Goodenough showed the photographs to 68 university students who were instructed to match the photos and the descriptions of the emotion-evoking situations used in making the photos. The latter description contained a label corresponding to the emotion the experimenter intended to photograph. The number of correct judgments (47.4%) exceeded chance (8.3%) by a highly significant margin. She concluded: "The findings suggest that however greatly the overt expression of emotional states may be inhibited, modified, or intentionally assumed in social relationships of adult life, the language of expression is nevertheless built upon a core of native reaction-patterns which appear at so early an age that they can hardly be ascribed to training [Goodenough, 1931, p. 101]."

Wolff (1963) has shown that facial movements morphologically resembling the smile occurred two to twelve hours after birth, and that smiles could be elicited with a variety of sounds during the first week of life.

Several studies with subjects born blind or blinded in infancy have produced data favoring the view that the genes play a prominent role in facial expressions. Dumas (1932, 1948) found that genuine emotions occurring in natural situations were expressed by the blind in the same way as by normals. Goodenough (1932) found that a ten year old congenitally blind girl showed the basic emotions in a fashion closely resembling the classical descriptions of Darwin.

Thompson (1941) studied the development of facial expressions in 26 blind and 29 seeing children who ranged in age from 7 weeks to 13 years. She found reliably identifiable expressions of joy, sadness, and anger in the blind, though they did not occur as uniformly as among the seeing subjects.

It should be noted that some of the early investigators rejected the concept of the innateness of the emotions and their expressions. The work of Landis (1924a, 1924b, 1929), Sherman (1928) and the various interpretations of the work of Klineberg (1938, 1944) were major influences in shaping the dominant view in contemporary psychology that the emotions or at least emotional responses including subjective experiences and facial expressions are learned phenomena. As already indicated this line of research and the criticisms of it have been reviewed elsewhere, but one general criticism is in order. The core problem with learning theory formulations of the development of the emotions is that none has a satisfactory explanation as to why emotion a but not b gets conditioned to stimulus situation c but not d, while emotion b may become associated with situation d but not with c. Concretely, learning theory offers no explanation at all for the phenomenon of "stranger anxiety," quite commonly observed at 6-8 months. Why does the infant at this age express fear when a stranger approaches and touches him rather than express distress or anger? Or, why anger instead of distressful crying in the

7 month old when a familiar person ceases to attend him? Bad tastes and foul odors do not evoke fear in the infant and strangers do not evoke disgust.

Emotion Recognition Studies and Some Indications of Cross-Cultural Constancies

If the emotions and their facial expressions are a result of evolutionary and genetic processes, then it is reasonable to assume that the capacity to recognize the expressions is likewise inherited. All those who hold the evolutionary-genetic view of the origin of emotional expressions explicitly or implicitly maintain that expressions were passed along from generation to generation because they serve the adaptive function of communicating useful information to other members of the species. For an expression to have a communicative function it must be recognized by others.

A significant part of Darwin's work on the emotions was cross-cultural. It was the agreement among his foreign observer-collaborators that led him to conclude that the expressions are innate. He also argued from these data that the universality of the emotions and their expressions were evidence for the continuity of the various races of man in one species.

Darwin (1872) conducted the first empirical study of the recognizability of facial expressions using facial photographs. In discussing the data on a photograph borrowed from Duchenne, he remarked: "That the expression is true, may be inferred from the fact that out of fifteen persons, to whom the original photograph was shown, without any clue to what was intended being given them, fourteen immediately answered, 'despairing sorrow,' 'suffering endurance,' 'melancholy,' and so forth [p. 186]."

After Darwin's work in 1872, there was a publication gap of 42 years. Then, beginning with Feleky's study in 1914 there were a number of

historically and scientifically important papers on emotion expression and recognition but as we have already noted, the only ones that had much impact were those of Landis and Sherman, studies that were congruent with the then very dominant s-r reinforcement learning theory psychology. Some of the contributions of significance were those of Langfeld (1918a), Ruckmick (1921), Allport (1924), Gates (1925), Frois-Whittmann (1930), and Munn (1940). All of these investigators presented clear and strong evidence that within a given culture there were facial expressions that could be recognized in a reliably consistent manner. The percentages of agreement among subjects classifying photos of facial expression were not great, but as Klineberg remarked in his first review of this early work, the subjects were more often right than wrong, at least for some expressions.

The early workers in emotion expression did in fact suffer from the lack of an adequate theory of the emotions; there was not even a widely accepted definition of emotions and no agreement as to what were the separate fundamental emotions. Feleky had her subjects use a checklist of 122 emotion terms but still got a considerable number of significant agreements in classification. Others, such as Gates, used a free-response method but had no clear conceptual scheme for categorizing the obtained responses. Woodworth (1938) must be credited with bringing some order to this aspect of the field by re-introducing six Darwin-like categories: Happiness, Surprise, Fear, Anger, Disgust, Contempt.

The facial photographs used in the early studies also left much to be desired. Several of them used a selection from the Rudolph collection, where the pictured person was a long-haired male whose facial musculature was hidden by a full beard and moustache. Still, subjects beat chance in classifying them!

A number of the investigators themselves posed for photographs. (Feleky, Ruckmick, Frois-Wittmann). Perhaps the best of these series

was that of Frois-Wittmann. Schlosberg added the Lightfoot series, and though with more modern photography he obtained clearer pictures, they may not be as expressive as those of Frois-Wittmann. All of these photo series were of a single person, and judgments may have been facilitated by this fact. Tomkins and McCarter (1964) used several people each in a number of expressive poses, and with the best three pictures of each affect they got percentage agreements from 42-96%, with most percentages well above 50. They thought that one reason for not obtaining even higher agreement was certain linguistic conventions that tend to reduce the verbal discriminations of emotion. It does seem that in certain sub-cultures in one era or the next everything positive is "swinging," "cool," "tough," "turned on," "tuned in," or "up," and everything negative is "square," "gross," short-haired and shaved, or over 30. None of these descriptions do very much to discriminate emotions.

Some of the most influential of the socio-cultural research relating to the emotions was that of Klineberg (1938, 1940), though it is difficult to sort out the effects of his findings from the numerous Zeitgeist determined misinterpretations of them. Klineberg is often credited with the axiom: What shows on the face is written there by culture. Though he was strongly interested in differences due to culture and environment, the axiom, which he tells me is not what he really said, does not give a fair picture of his work. He held that some emotional expressions were constant across cultures and he found the greatest differences among cultures on other nonverbal forms of communication such as gestures and stylized or stereotyped movements of theatricals. In his study of emotional expression in Chinese literature he found that worry or disappointment may be signalled by handclapping, strong anger by fainting, and surprise by standing on one foot, yet considering all the evidence he concluded: "There is no doubt of the frequent similarity between Chinese and Western

forms of expression [Klineberg, 1938, p. 518]."

Vinacke and Fong (1949, 1955) conducted systematic studies of Chinese, Japanese, and Caucasion males and females using candid photos of caucasions in one experiment and of orientals in another. They also showed the face-alone in one condition and the face-in-context in a second. They found some differences but none they considered of any practical significance. They found that orientals did slightly better in classifying expressions of orientals and similarly for caucasions, but they concluded that the judgment of facial expression was not dependent to any marked degree upon differences in facial structure. They recognized that their studies did not answer the question of cultural differences in emotional expression and recognization, partly because all their subjects lived in the same general area and had considerable exposure to the expressions of the three cultures they represented.

Triandis and Lambert (1958) used the Lightfoot photographs to compare the way Greeks and Americans rated the pictures on Schlosberg's so-called three dimensions of emotion and to compare the way the two groups classified the pictures in the Woodworth categories. They found quite strong correlations between the two groups' ratings on Schlosberg's dimensions (.67 to .91). They found greater consistency in the dimensional ratings of the Greeks than in their Woodworth categorizations, where a number of pictures were classified in an apparently random order. I think this latter finding is a little misleading, since the Lightfoot series was posed specifically to represent the three dimensions of Pleasantness-Unpleasantness, Acceptance-Rejection, and Sleep-Tension. Engen, Levy, and Schlosberg (1957) have reported that the dimensional ratings of the Lightfoot series did not predict the Woodworth categorizations as well as was the case for the Frois-Wittmann series. Further, it doesn't seem at all surprising that the Greeks (or any other group)

should place pictures of a sleepy looking girl (one group of the sleep-tension poses) randomly into the emotion categories. Still, it should be noted that even with this fault in the stimulus series, Triandis and Lambert found apparently reliable classifications for more than half the pictures. Further, their research suggests that the dimensional approach may be complimentary to the approach based on qualitative emotion categories. Additional research is needed in order to understand the relationships between the two approaches, their points of convergence, and their points of difference.

Secord and Bevan (1956) have done cross-cultural studies with facial photographs though they were concerned with subjects' ratings of physiognomic and personality traits rather than with emotional expressions. They found that impressions of physiognomy and personality from photographs were relatively stable and generally similar for Americans and Norwegians.

Though not cross-cultural in nature a number of studies have shown that "social learning" via suggestion and direct coaching can influence the judgment of facial expressions (Langfeld, 1918b; Jarden and Fernberger, 1926; Guilford, 1929; Jenness, 1932; Nelson and Izard, 1962; Carlson and Izard, 1963; Izard and Nunnally, 1965). These studies like many others in social and clinical psychology show that the variable of social influence is a potent one, but they do not detract from the general consistency of the theme that there are within-cultural and cross-cultural constancies in the expressions and perceptions of the emotions.

Cross-Cultural Similarities in the Expression and Perception of Emotion: Recent Empirical Research

As we have noted, cross-cultural research has typically sought and found a variety of psychological and sociological differences attributable to differences inherent in the different cultures. While these findings

are of considerable value, we believe that a science of interpersonal psychology or comparative culture must begin with the delineation of significant similarities. Since differences are meaningful only for phenomena having common characteristics, it is reasonable to believe that typical cross-cultural studies have assumed that the cultures or peoples under study have some fundamental characteristics in common. But what characteristics--physical structure, body needs, locomotion, verbal means of communication? Or are there psychologically more salient similarities, similarities that give people a common base of subjective experiences and motivating conditions? I hold that the answer to both questions is affirmative, but of most importance is the contention that the innate emotions provide all men a set of common experiential, motivational conditions which can serve as the framework for mutual understanding and the toleration of differences less central to self or to being human.

The basic postulate is this: the similarity between personality and socio-cultural phenomena will increase, the more the phenomena are simple, direct functions of one of the fundamental emotions. Similarity will decrease and differences increase as we consider phenomena determined by emotion interactions and by interactions between the emotion system and other subsystems of personality. In applying this principle to emotion and emotion related phenomena we would expect greatest similarity at the neurological level, next greatest at the behavioral-expressive level, and least similarity at the cognitive level where we are concerned with emotion labels and emotion attitudes. Within the behavioral level cross-cultural similarity of response will decrease as we go from facial behavior (which is really part of the emotion) through the following sequence: gross bodily response, gestures or peripheral response, instrumental acts that are biologically adaptive

(e.g., acts of self-preservation in response to fear), instrumental acts that are culturally adaptive (e.g., table manners that avoid shame or embarrassment). Within the cognitive realm we would expect the following similarity to dissimilarity sequence: recognition of the facial expressions, attitudes toward the emotions, attitudes and values that are a function of a complex of emotions and emotion interactions.

Izard's (1968a) program of cross-cultural research on the emotions has yielded results congruent with the above theoretical formulation of psychological similarities and differences. Following both theoretical (Tomkins, 1963; Izard & Tomkins, 1966) and empirical guidelines, he developed a series of 32 photographs of facial expressions, four representing each of eight fundamental emotions. In like manner, he developed for each of the eight emotion categories a set of defining terms. The emotion categories and defining terms are shown below.

The Fundamental Emotions

1. INTEREST-EXCITEMENT: Concentrating, attending, attracted, curious
2. ENJOYMENT-JOY: Glad, merry, delighted, joyful
3. SURPRISE-STARTLE: Sudden reaction to something unexpected, astonished
4. DISTRESS-ANGUISH: Sad, unhappy, miserable, feels like crying
5. DISGUST-CONTEMPT: Sneering, scornful, disdainful, revulsion
6. ANGER-RAGE: Angry, hostile, furious, enraged
7. SHAME-HUMILIATION: Shy, embarrassed, ashamed, guilty
8. FEAR-TERROR: Scared, afraid, terrified, panicked

The first term represents the emotion at a relatively low level of intensity and the second term represents the emotion at a high level of intensity. The remaining words are the additional definitional terms for the various categories.

The photographic and verbal representations of the emotions were

used separately or in combination in a series of cross-cultural experiments on emotion recognition, emotion labeling, and emotion attitudes. The subjects in these experiments were university students.

Emotion Recognition

In the Emotion Recognition experiments, subjects of different cultures were asked to study the list of fundamental emotions. Then they were shown the photos of facial expressions one at a time in random order and requested to indicate which emotion category (verbal representation of the emotion) best described the expression (photographic representation of the emotion).

Our general theory of behavior postulates that the fundamental emotions are innate. Thus, it was hypothesized that there would be a high degree of agreement across cultures in recognizing or categorizing the expressions; i.e., in matching photographic and verbal representations of the fundamental emotions. On the basis of the author's theory of psychological similarity and difference, it would likewise be predicted that there would be great similarity among cultures, or a high degree of consensus in matching emotion photos and emotion labels. The results are presented in Table 1. The results of this experiment were dramatically

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Table 1 about here

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clear (Izard, 1968a). For the original American sample, the average percent agreement in placing the 32 pictures (4 for each emotion) in the appropriate categories was 83%, whereas 12 1/2 percent agreement would be expected by chance. The corresponding percent agreement across all cultures was 78%. On the average, little difference appeared among the seven American-European cultures. Though more appreciable differences appeared for the African and to a lesser extent for the Japanese subjects, with all but one picture for the Africans and two for the Japanese, the

modal category remained the same as for the other cultures. Some of the difference between the Africans and others may have been due to a language factor. The African sample, representing many different languages or dialects, was the only group who did not receive the experiment in their native tongue.

The high degree of agreement with which subjects from widely separated cultures recognized the fundamental emotions lends support to the basic postulate that the emotions are subserved by innate mechanisms. The data is all the more convincing since the photos were all of Caucasians, while the subjects were Caucasian, African, and oriental. The evidence suggests that the fundamental emotions provide subjective experiences that are common to all people regardless of language, race, or culture. I am inferring here that the matching of the photographed expression of emotion with the verbal concept of that emotion is mediated by subjective experience that can be defined or represented by either the photographic or verbal symbol. Or, put another way, the matching is possible because the expression and the verbal concept have a specific subjective experience as a common referrent. That these subjective experiences communicate specific meanings is shown by the facility with which the subjects matched photographic and verbal representations of these experiences.

The Emotion Recognition experiment was adapted for children. Prior to developing the children's form of the experiment, pilot studies showed that Disgust and Contempt could be treated as two different categories, making a total of nine categories. The materials for the children's form of the Emotion Recognition Task consist of 36 cards, each containing 3 photos with each photo representing the expression of a different emotion. The photos were arranged in triads by random procedure, with the restrictions that each of the nine emotion categories provide the keyed item four times, and that in each triad the keyed item

is compared with two different emotions. In this way every emotion is compared with every other emotion in the course of the experiment. The keyed items were arranged in random order. Each card (subset of 3 photos) is presented individually, and the child is instructed to look carefully at each photo. The experimenter then poses the appropriate question which always begins with the stem, "Show me the one who is." The stem is followed by key emotion terms ("happy" . . . "sad" . . . "afraid" . . . "mad" . . . etc.) with appropriate elaboration. The questions labeled and defined the fundamental emotions in the simplest possible vocabulary. The child's score was the number of "correct" responses. Correctness of response was determined by reference to the cross-cultural norms for adults; i.e., the modal categories of Table 1 were considered as the standard or correct response.

The results of the Emotion Recognition Task for 140 French and 286 American children are depicted graphically in Figure 1. The growth curves

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Figure 1 about here

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for the two cultural samples are remarkably similar. The slight variations between the two curves could be due to differences in Ns, or imperfect matching of the two samples on relevant variables such as emotion constriction due to socio-economic or cultural deprivation. The regression of Emotion Recognition on age is highly significant (e.g., for the French sample $F_{1,126} = 246$, $P < .001$; $r^2 = .66$, estimated correlation, .81).

The highly similar growth curves of Emotion Recognition for French and American children constitute additional evidence for our general postulate of the innateness of emotions. Again we have evidence for a universal set of subjective experiences which correspond to, or are part of, the fundamental emotions and which mediate responses such as emotion

recognition. The linkage between the subjective experience, the facial expression, and the cognitive label of a fundamental emotion appears to be pan-cultural. It follows that the chief determinants of these phenomena, the fundamental emotions and the emotion system, are subserved by innate mechanisms that provide a common base of experiences, expressions, and meanings--in effect, a pan-cultural communication system.

Emotion recognition was assessed in one other way. The stimuli were photographs that contained cues for two or more emotions in the same face--i.e., a Complex Emotion Recognition Task (CERT). Since these complex expressions derive from emotion interactions and since the linkage between one emotion and another involves other personality subsystems (e.g., cognitive) and social interactions such as in socialization, we would not expect as much cross-cultural similarity in responses to CERT stimuli. The results confirm this expectation. First it was determined that the categorization of the complex expressions was not random. Then, they were administered to American and French samples. In contrast to the expressions of fundamental emotion where there were no substantial differences between these cultures, 11 of the 34 complex expressions showed significantly different response distributions for the French and American samples.

Emotion Labeling

In a second type of experiment, subjects were shown the photographs of facial expressions and requested to say how the pictured person was feeling or what emotion was being expressed. Altogether, the 156 subjects from the four cultures used 205 words in responding to the 32 photos. Many of the 205 terms were used by only two or three subjects in a single culture. Thirteen judges were asked to place the 205 words into the eight emotion categories as defined on the list of fundamental emotions. Judges could also use two other categories: 1) no emotional connotation

and 2) connotes two or more emotions. Of the 205 words, 27 were categorized by a majority of judges as having no emotional connotation, none were judged by a majority as connoting two or more emotions, 43 were not agreed upon by a majority of judges, and 135 were categorized in one of the eight emotion categories by 7 or more of the 13 judges. Sixty-two of the 135 were agreed upon by all 13 judges; all except 32 were agreed upon by 10 or more of the 13 judges. The free response label was considered descriptive of a specific emotion or correct if 8 or more judges agreed on its classification.

The results of the free response or Emotion Labeling experiment are presented in Table 2. In considering the data in Table 2, it should be

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Table 2 about here

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remembered that subjects from four different cultures were "conceiving and labeling" with no structure or restraints to focus responses other than what was provided by the expression photographs themselves. The probability of chance agreement was exceedingly small. As shown in Table 2, the amount of agreement on the free response labels was quite substantial. The average percent agreement for all categories and all cultures was 56%. Yet, as was expected, the degree of agreement or similarity was not as great as in the case of Emotion Recognition. In Emotion Recognition the subject only has to match two different symbols that represent or refer to a common subjective experience. In Emotion Labeling only the pictorial symbol of the emotion is supplied and the subject has to engage in a cognitive process more complex and less structured than recognition or matching. Each subject through recall or imagination supplies his own label or perhaps his own list of labels from which he chooses one. These cognitive processes serve to make the task something more than a simple or direct function of emotion and

hence to decrease the degree of similarity among responses.

While the percentages of free response labels falling into the specific emotion categories were lower than the corresponding percentages of agreement in Emotion Recognition or classification, there were no genuine disagreements among cultures regarding the category to which a facial expression belonged. For example, when the modal response to a photo for one cultural sample was Fear, the modal response was never Anger, Disgust, Distress, or any emotion other than fear for another culture.

Attitudes Towards the Emotions

In a third type of experiment subjects were asked to respond to a number of questions about the emotions and their personal emotional experiences. The sample of questions and the corresponding responses for the different cultural samples presented in Table 3 will illustrate

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Table 3 about here

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these data. As can be seen, there was considerable agreement among cultures, but there were some genuine differences. The modal responses for the different cultural samples often fell into different emotion categories. For example, with the Japanese Contempt is the most dreaded emotion, Shame the most difficult to understand. For Americans, however, Shame and Fear are the most dreaded emotions while Contempt, Shame, and Fear are the least understood. As would be expected from our theory of similarities and differences, the differences in this experiment are greater and more profound than in the other two types of experiments based on the fundamental emotions. Here, it was not just a question of differences in percentage agreement on a commonly chosen emotion category--the modal responses of the different cultures were often in different emotion categories. This was expected since this experiment

taps attitudes, phenomena which have an affective and cognitive component (Katz & Stotland, 1959; Rosenberg, 1965). Further, many of these attitudes took shape or began taking shape very early in life. During socialization different cultures place different values on the expression or inhibition of different emotions. It is only to be expected that different attitudes toward the emotions would develop. Yet, there can be little doubt that attitudes toward the emotions will show greater similarity than attitudes toward abstract verbal concepts that have no ready referent in a set of common subjective experiences.

Support from other Approaches

It is difficult to assess the relevance of ideas or evidence stemming from entirely different approaches or theoretical frameworks. Yet, there are a couple of things that should be noted here, even though it will not be possible to arrive at any adequate synthesis without research specifically designed to provide a basis for comparing the different theories and methods.

Osgood (1968) has developed a factor-analytic, dimensional approach to the study of meaning and the elements of communication. He has been interested mainly in the psychology of linguistic communication, but he and his students have recently undertaken studies of the meaning of facial features or expressive movements. In his many cross-cultural studies he has found that the most reliable dimension of meaning and the one which accounts for the greatest proportion of variance is the Evaluative factor. Osgood and his colleagues have referred to this factor as the affective component in communication. On the surface, at least, this finding seems to support in a general way the two main theses of this paper--that the emotions are innate, universal phenomena that provide a species common framework of motivational experiences and communicative cues, and that interpersonal or cross-cultural similarity is greatest at

the affective or emotional level.

Cuceloglu (1967) used Osgood's approach in studying the communicative value of schematic faces, which were varied by changing the position or contour of eyes-eyebrows, nose, and mouth. He found three meaning or verbal factors in the words subjects used to describe the faces, but the factors tended to be bi-polar. The word clusters at five of the six poles corresponded very closely to five of the sets of words I obtained in the free-response labeling of facial photographs representing the fundamental emotions. Cuceloglu and I (1968) agreed that if his schematic faces had represented all of the fundamental emotions he probably would have found additional corresponding factors.

In considering still another field of research, Daniel Katz made the interesting observation that Thurstone used items with an affective component in his original race attitude scales. On one occasion he expressed the opinion that some items Katz was working with would not scale because they did not have an affective component. Katz did succeed in scaling his items but the scales were not as good psychometrically as those using affect-related items (Katz, 1968).

Summary and Conclusions

The basic assumption of the universality and innateness of the emotions was considered essential to the theses and data presented in this paper. Consequently, this assumption was placed in theoretical and historical perspective and was supported by an analysis of the evidence from the evolutionary-ethological view, from studies of developmental processes and the born blind, and from cross-cultural studies of emotion recognition.

The ideas and evidence presented in this paper were generally related to our theory of behavior that postulates nine fundamental, innate emotions as man's principal motivation system. In this theory emotion

is defined as having three levels: neurological, behavioral-expressive, and phenomenological. Each emotion is considered to have distinctive motivational, cue-producing properties.

More specifically, the empirical data and conclusions were organized around two general hypotheses. The first general hypothesis, based on our postulate that the fundamental emotions are innate and species common, was that the emotions provide a common base of subjective experiences and expressive behaviors and that these experiences and expressions tend to generate a set of labels or symbols which have universal meaning via their common referents--the subjective experiences and facial expressions. These assumptions led to the working hypothesis that subjects from different cultures would match pictured expressions of the fundamental emotions and verbal labels (concepts) of the emotions with a high degree of uniformity. It was further hypothesized that free response labeling of emotion expressions and attitudes toward emotions would also show substantial cross-cultural consistency. The empirical data confirmed these hypotheses and supported the assumption of the universality and innateness of the fundamental emotions.

The second general hypothesis was as follows: Psychological similarity (interpersonal or cross-cultural) is a function of the fundamental emotions or the emotion system; or, similarity among people is greatest at the emotion level, where we are dealing with the subjective experience and expression of one of the fundamental emotions. Similarity decreases and difference increases, as more than one emotion comes into play, and as emotion interacts with the motor system and with the cognitive system. This led to the working hypothesis that the closer our measuring instruments come to assessing experiences or phenomena based on the fundamental emotions, the more we shall find cross-cultural similarities. As our measure focuses more on behavior (other than the facial expression which

is part of the emotion) and on cognitive variables, the more we shall find cross-cultural differences.

The results of our Emotion Recognition and Emotion Labeling Experiments and Emotion Attitude Questionnaire tended to confirm our hypothesis relating to psychological similarity and difference. The Emotion Recognition Experiment, presenting photographically a representation of an emotion expression and requiring only that the subjects match the photographic representation with one of eight verbally defined emotion concepts, showed the greatest degree of cross-cultural similarity. The average percentage agreement across all eight emotion categories (four pictures per category) and across all nine cultural samples was 78%, while the agreement expected by chance was 12 1/2%.

In the Complex Emotion Recognition Experiment each stimulus picture was deliberately selected to show some cues or features of two or more emotions. Our general theory as applied to affect-affect dynamics (relations between emotions) predicts interpersonal and inter-cultural differences in the linkages between emotions that are formed during socialization and individual experience. Indeed, 17 of the 34 complex expressions showed significantly different distributions of responses for American and French samples. It should be noted, though, that even here we found a considerable number of similarities. These similarities and differences were considered of special practical importance for clinical and educational applications, since it is the combinations of emotions that present most of the complexities of emotion-communication in real life situations.

The Emotion Labeling Experiment, presenting the emotion photos but giving the subjects unrestricted choice in selecting an emotion label from his own repertoire of cognitions, showed a substantial degree of cross-cultural similarity, but less than that found by the Emotion

Recognition measure. The average percent agreement across emotions and cultures was 56%. In the Emotion Attitude Questionnaire where the stimuli consisted of verbal items (cognitive variables) assessing attitudes toward the emotions, the results showed some important similarities but relatively fewer than either of the other measures; and there were a number of highly significant differences with important implications for inter-cultural understanding.

In summary, several important conclusions follow from the assumptions, supported by the theory and evidence presented, that the fundamental emotions are a) innate, universal phenomena, and b) the components of man's principal motivation system.

1) All people have in the fundamental emotions the capacity for a common set of subjective experiences and expressions.

2) These expressions have a special communicative value since they are universally recognized and understood.

3) The communication function of the expression facilitates the interpersonal and inter-cultural understanding of the underlying subjective experience.

4) The experiences and expressions of the fundamental emotions may serve as a base for interpersonal and cross-cultural understanding of more complex emotional experiences, cognitions, and actions.

5) The emotions tend to generate a set of cognitive labels that translate to a corresponding common set of meanings.

6) The theses developed from our theory and supported by our experiments seem to be corroborated by Thurstone's concept of the role of affect in race attitude scaling and by Osgood's finding that the Evaluative or affective dimension of meaning shows the greatest cross-cultural constancy.

These conclusions support an expanded definition of the subjective

culture or phenomenal field, particularly with respect to its determinants. It was proposed that the subjective culture is determined by innate and socio-cultural factors and by unique person-environment interactions. Since the emotions were considered to be man's principal motivation system and to be motivating, cue-producing experiences, they were viewed as the most fundamental and culture-common aspects of subjective culture and phenomenal field.

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Footnote

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Table 1

Classification of Facial Expressions of Emotions:

Percentage Agreement in Modal Categories

Emotion	Cultural (National) Group								
	American	English	German	Swedish	French	Swiss	Greek	African	Japanese
N =	89	62	158	41	67	36	50	29	60
nterest-Excitement	84.5	79.2	82.0	83.0	77.5	77.2	66.0	51.8	71.2
njoyment-Joy	96.8	96.2	98.2	96.5	94.5	97.0	93.5	68.0	93.8
rprise-Startle	90.5	80.0	85.5	80.0	84.2	85.5	80.2	49.0	79.2
istress-Anguish	74.0	74.5	67.2	71.5	70.5	70.0	54.5	32.2	66.8
isgust-Contempt	83.2	84.5	73.0	88.0	78.5	78.2	87.5	55.0	55.8
nger-Rage	89.2	81.5	83.2	82.2	91.5	91.8	80.0	50.8	56.8
name-Humiliation	73.2	59.5	71.8	76.2	77.2	70.0	71.0	43.2	41.2
ear-Terror	76.0	67.0	84.0	88.8	83.5	67.5	67.8	48.2	58.2

Table 2

Percentage of Females Giving "Correct"* Labels

on Emotion Labeling Task

	% Using Label			
EMOTION	American (N = 39)	English (N = 39)	French (N = 53)	Greek (N = 25)
INTEREST-EXCITEMENT	43.5	36.0	34.1	35.2
ENJOYMENT-JOY	89.3	84.7	82.1	80.4
SURPRISE-STARTLE	89.7	83.4	65.8	60.0
DISTRESS-ANGUISH	63.4	68.9	53.2	55.3
DISGUST-CONTEMPT	53.6	47.5	48.8	55.3
ANGER-RAGE	70.4	57.0	58.0	54.6
SHAME-HUMILIATION	14.7	6.9	18.2	18.4
FEAR-TERROR	56.1	61.5	63.2	67.7

*Label is considered "correct" if at least 8 out of 13 judges agreed on its placement in the emotion category.

Table 3

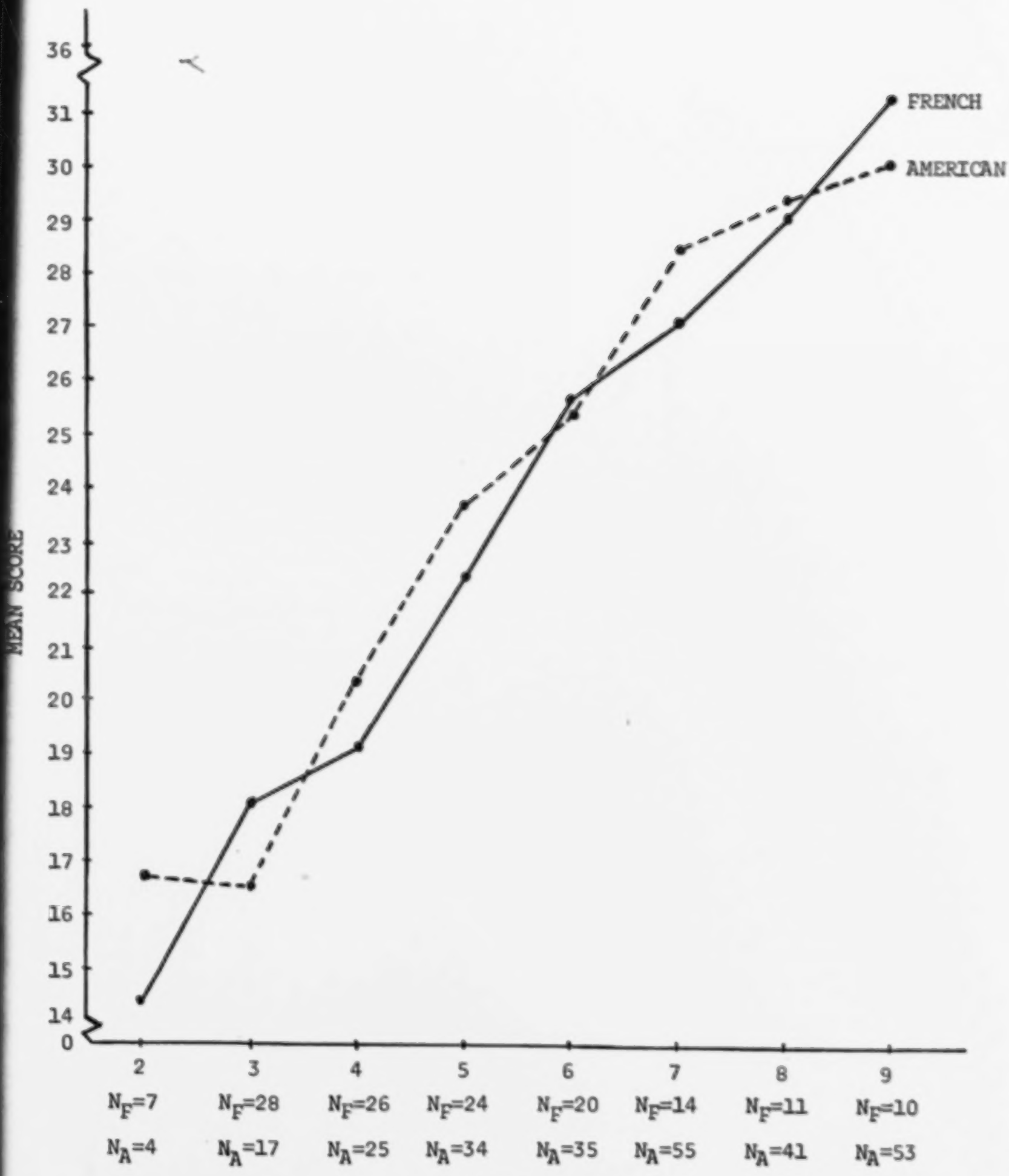
Modal Category Percentages for Female Subjects

on Selected Items of the Emotion Attitude Questionnaire

Question	•Cultural (National Group American N = 40	English N = 40	German N = 72	Swedish N = 26	French N = 53	Greek N = 28	Japanese N = 18
#33 Emotion Understand Best	Enj-Joy (33%)	Int-Exc (36%)	Enj-Joy (47.2%)	Enj-Joy (80.7%)	Enj-Joy (39.6%)	Int-Exc (28.6%)	Enj-Joy (89%)
#34 Emotion Understand Least	Ang-Rage Shame-Hum (21%)	Fear-Ter Shame-Hum Disg-Cont (20%)	Disg-Cont (33.3%)	Disg-Cont (43.4%)	Ang-Rage (37.7%)	Disg-Cont (48%)	Int-Exc Shame-Hum (33%)
#35 Emotion Dread Most	Fear-Ter (51%)	Shame-Hum (37%)	Fear-Ter (31.5%)	Fear-Ter (34.6%)	Fear-Ter (30.2%)	Shame-Hum (32%)	Disg-Cont (72%)
#42 Negative Emotion Most Prefer To Experience	Disg-Cont Ang-Rage (33%)	Ang-Rage (41%)	Ang-Rage (37.5%)	Ang-Rage (50%)	Disg-Cont Ang-Rage (27.3%)	Disg-Cont (35.3%)	Disg-Cont (29%)

Figure Caption

Figure 1. Emotion Recognition scores for 140 French and 286 American children.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N_A=4 N_A=17 N_A=25 N_A=34 N_A=35 N_A=55 N_A=41 N_A=53
CHRONOLOGICAL AGE

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13. ABSTRACT Several important conclusions follow from the assumptions, supported by the theory and evidence presented, that the fundamental emotions are a) innate, universal phenomena, and b) the components of man's principal motivation system. (1) All people have in the fundamental emotions the capacity for a common set of subjective experiences and expressions. (2) These expressions have a special communicative value since they are universally recognized and understood. (3) The communication function of the expression facilitates the interpersonal and inter-cultural understanding of the underlying subjective experience. (4) The experiences and expressions of the fundamental emotions may serve as a base for interpersonal and cross-cultural understanding of more complex emotional experiences, cognitions, and actions. (5) The emotions tend to generate a set of cognitive labels that translate to a corresponding common set of meanings. (6) The theses developed from our theory and supported by our experiments seem to be corroborated by Thurstone's concept of the role of affect in race attitude scaling and by Osgood's finding that the evaluative or affective dimension of meaning shows the greatest cross-cultural constancy.

These conclusions support an expanded definition of the subjective culture or phenomenal field, particularly with respect to its determinants. It was proposed that the subjective culture is determined by innate and socio-cultural factors and by unique person-environment interactions. Since the emotions were considered to be man's principal motivation system and to be motivating, cue-producing experiences, they were viewed as the most fundamental and culture-common aspects of subjective culture and phenomenal field.

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	ROLE	WT	ROLE	WT	ROLE	WT
Emotion Cross-Cultural						

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